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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,013	12/09/2003	Kuniaki Yoshikata	031312	2748

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EXAMINER

DOVE, TRACY MAE

ART UNIT PAPER NUMBER

1745

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/730,013

Applicant(s)

YOSHIKATA ET AL.

Examiner

Tracy Dove

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/9/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 6/9/04 has been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “the electrolyte is disposed on one surface of the substrate, and the fuel electrode and the air electrode are disposed on one surface of the substrate...”, which is unclear. The specification appears to only support the electrode, fuel electrode and air electrode being on the same surface of the substrate. Examiner suggests the claim be amended to recite “the electrolyte is disposed on a first surface of the substrate, and the fuel electrode and the air electrode are disposed on the first surface of the substrate...” to clearly claim the invention. All dependent claims should be amended accordingly.

Claim 2 recites “greater than that of the electrolyte”, which is indefinite. Examiner suggests “greater than a height of the electrolyte”. Note “the surface” should be amended to

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recite “a first surface” or amended to clearly recite which surface of the substrate the heights are measured from.

Examiner suggest claim 4 be amended to recite “a second surface” instead of “the other side”. Furthermore, claim 4 recites “wherein in the single cell”, which is indefinite because it is unclear which “single cell” is being further limited. Again, Examiner suggests language such as “a first single cell” and “a second single cell” to clearly claim the invention. See also claim 11 that contains similar language.

Claim 7 recites “and one of the fuel and air electrodes”, which is improper group language. Examiner suggests “and one of the fuel electrode or the air electrode”. Claim 7 recites “the other electrode is not in contact with the electrode disposed on the electrolyte and has at least one portion that is disposed on one surface of the substrate and in contact with the electrolyte”, which is confusing. The claim should be amended to clearly recite the invention and have proper antecedent basis for all claim limitations.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 7-9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii et al., WO 02/080299 and/or under 35 U.S.C. 102(e) as being anticipated by Fujii et al., US 7,081,317.

Note WO 02/080299 was published in Japanese, thus, English language US 7,081,317 will be used to discuss the teachings of Fujii.

Fujii teaches a thin film fuel cell having a substrate 11, an electrolyte 13, a fuel electrode 12, an air electrode 14 and an interconnect 15 (Figure 1). Note mask layer 17 is removed to produce the finished fuel cell. The thickness of the electrolyte 13 is 0.5 to 5  $\mu\text{m}$  (5:54-55). As shown in at least Figure 1 the electrolyte 13, fuel electrode 12 and air electrode 14 each contact a first surface of the substrate 11 with the electrolyte located between the fuel electrode 12 and the air electrode 14. Figure 4 shows a second thin film fuel cell formed on a second surface of a substrate. Figure 1 also shows the thickness of the electrolyte between the air electrode and the fuel electrode is thickness than the fuel electrode.

Thus the claims are anticipated.

\*

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Claim 10 is rejected under 35 U.S.C. 102(b)/103(a) as being anticipated by, or alternatively unpatentable over, Fujii et al., WO 02/080299 and/or under 35 U.S.C. 102(e)/103(a) as being anticipated by, or alternatively unpatentable over, Fujii et al., US 7,081,317.

Note WO 02/080299 was published in Japanese, thus, English language US 7,081,317 will be used to discuss the teachings of Fujii.

Fujii teaches a thin film fuel cell having a substrate 11, an electrolyte 13, a fuel electrode 12, an air electrode 14 and an interconnect 15 (Figure 1). Note mask layer 17 is removed to produce the finished fuel cell. The thickness of the electrolyte 13 is 0.5 to 5  $\mu\text{m}$  (5:54-55). As shown in at least Figure 1 the electrolyte 13, fuel electrode 12 and air electrode 14 each contact a first surface of the substrate 11 with the electrolyte located between the fuel electrode 12 and the air electrode 14. Figure 4 shows a second thin film fuel cell formed on a second surface of a substrate. Figure 1 also shows the thickness of the electrolyte between the air electrode and the fuel electrode is thickness than the fuel electrode.

Thus the claim is anticipated. The claim is alternatively unpatentable because the courts have ruled that product-by-process limitations, in the absence of unexpected results, are obvious. See MPEP 2113.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii et al., WO 02/080299 and/or Fujii et al., US 7,081,317.

Note WO 02/080299 was published in Japanese, thus, English language US 7,081,317 will be used to discuss the teachings of Fujii.

Fujii teaches a thin film fuel cell having a substrate 11, an electrolyte 13, a fuel electrode 12, an air electrode 14 and an interconnect 15 (Figure 1). Note mask layer 17 is removed to

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produce the finished fuel cell. The thickness of the electrolyte 13 is 0.5 to 5  $\mu\text{m}$  (5:54-55). As shown in at least Figure 1 the electrolyte 13, fuel electrode 12 and air electrode 14 each contact a first surface of the substrate 11 with the electrolyte located between the fuel electrode 12 and the air electrode 14. Figure 4 shows a second thin film fuel cell formed on a second surface of a substrate. Figure 1 also shows the thickness of the electrolyte between the air electrode and the fuel electrode is thickness than the fuel electrode.

Fujii does not explicitly teach the claimed electrolyte thickness.

However, the courts have held that where the only difference between the prior art and the claimed invention was a recitation of relative dimensions (thickness) of the claimed device (membrane) and a device having the claimed relative dimensions would not perform differently than the prior art device (membrane), the claimed device was not patentably distinct from the prior art device. See MPEP 2144.04.

#### ***Allowable Subject Matter***

Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claims require the height of the fuel electrode to be greater than the height of the electrolyte and the height of the air electrode to be greater than the electrode (as measured from a first surface of the substrate). Fujii does not teach or suggest this limitation.

#### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 21, 2006



TRACY DOVE  
PRIMARY EXAMINER